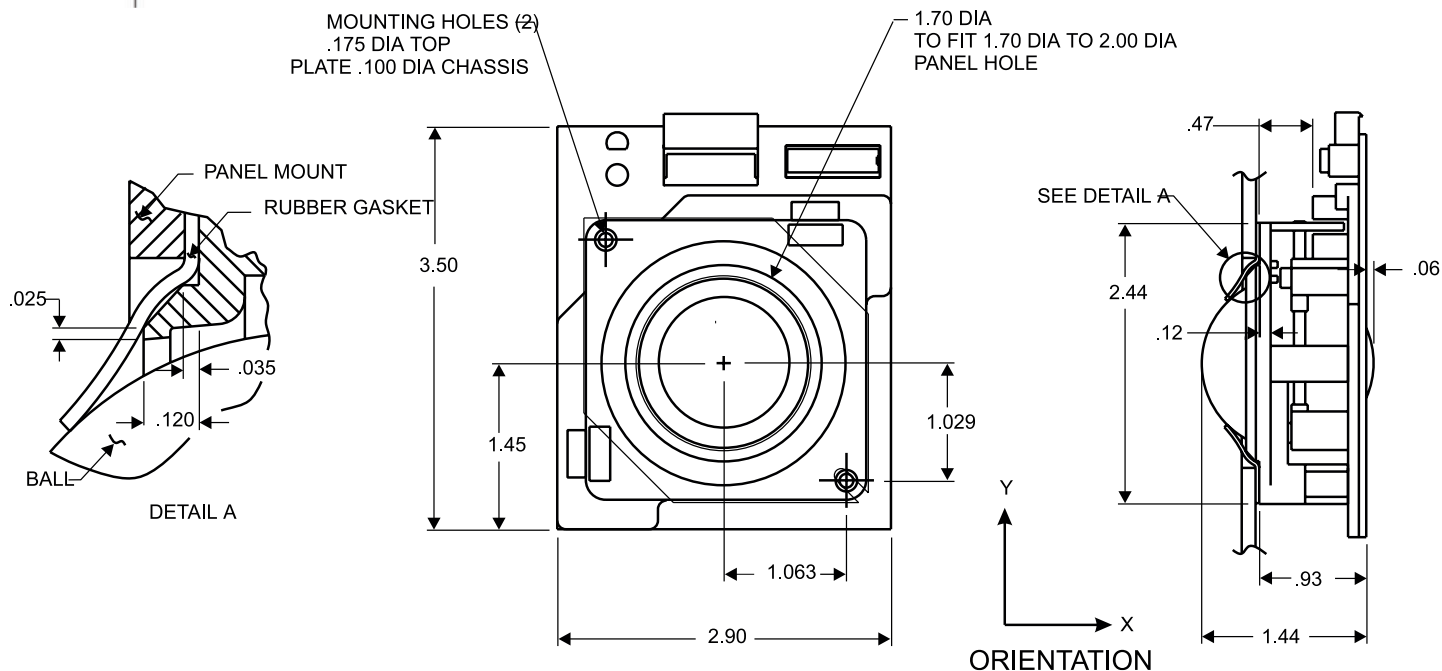*original equipment manufacturer*

Trackballs

A trackball from CH Products is essential when precision, control and accuracy are critical. Constructed of the highest quality components available, our versatile Trackball line can accommodate a variety of application needs. Whether it's integrated into control panels and kiosks, or stand-alone on a desktop, CH Products trackballs are the best choice for durability and precision. Encased five-point ball bearing support and stainless steel shafts in the desktop model allow for smooth and effortless accuracy. Each of our trackballs come with a multitude of standard features and an assortment of options, including Universal Serial Bus (USB) support.

LP150

P200

DT225 *CH Products*

DT225

LP150

Designed for integration into industrial keyboards and control panels, the LP150 panel mount trackball is ideal for limited space applications. The LP150 requires only one inch of below panel depth.

MOUNTING HOLES (2)
.175 DIA TOP
PLATE .100 DIA CHASSIS

1.70 DIA
TO FIT 1.70 DIA TO 2.00 DIA
PANEL HOLE

PANEL MOUNT
RUBBER GASKET

.025
.035
.120
BALL
DETAIL A

3.50
1.45
1.029
1.063
2.90

SEE DETAIL A
.47
2.44
.12
.06
.93
1.44

Y
X
ORIENTATION

STANDARD FEATURES
• Reliable non-contacting optical encoders
• Four distinct button inputs
• Compact low profile design
• Click and Click Lock inputs
• Easy axis rotation
• Polished stainless steel shafts
• Standard AMP connectors
• Easy installation
• Encased stainless steel bearings
• Protocol support:
  • PS/2 for PC's
  • Serial (5V and RS232)
  • USB for PC and Macintosh
  • PS/2 for UNIX Workstations
  • Raw Quadrature Waveforms
  • Sun Microsystems

Optional Features
• Rubber gasket (IP65 Compliant)
• 2 or 3 button strips
• Connector Cable

PHYSICAL SPECIFICATIONS
• Ball: 1.5in. Thermoset phenolic (black)
• Housing: Glass filled nylon (black)
• Rotation: 360º
• Tracking Force: 10 grams
• Weight: 133 grams
• Dimensions: 2.9in.W x 3.5in. D x 0.98in. H
• Mounting position: Horizontal to 90º
• Encased stainless steel bearings
• Temperature:
    Storage: -32ºC to +75ºC
    Operating: -15ºC to +70ºC
• Mechanical MTBF: 5,000,000 180º rotations with 6 ounces of vertical force

TYPICAL APPLICATIONS
• Automated machine controls
• Motorized microscopes & vision systems
• Industrial & scientific instrumentation
• Medical imaging systems
• Test & measurement equipment
• Video editing & production equipment
• Kiosks

ELECTRICAL SPECIFICATIONS
PS/2
    Input: +5V @ 30mA max
    Output: CMOS/TTL, Serial
Microsoft
    Input: DTR @ 15mA max
    RTS @ 15mA max
    Output: RS-232, Serial
USB
    Input: 4V-5.25V @ 25mA max
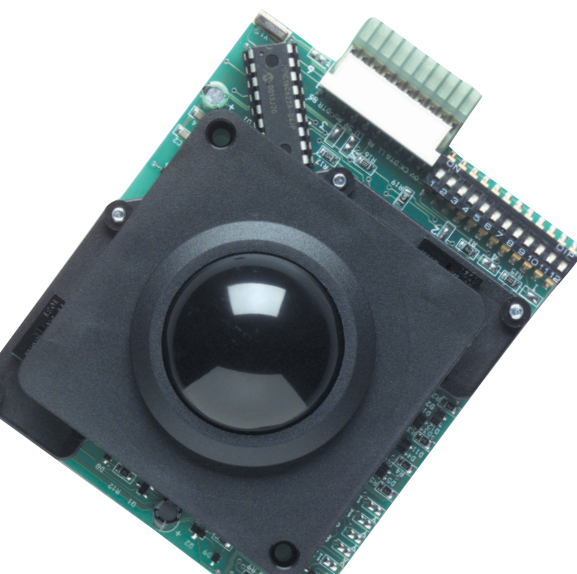Quadrature
    Input: +5V @ 30mA max
    Output: Quadrature Waveforms
Sun Workstation
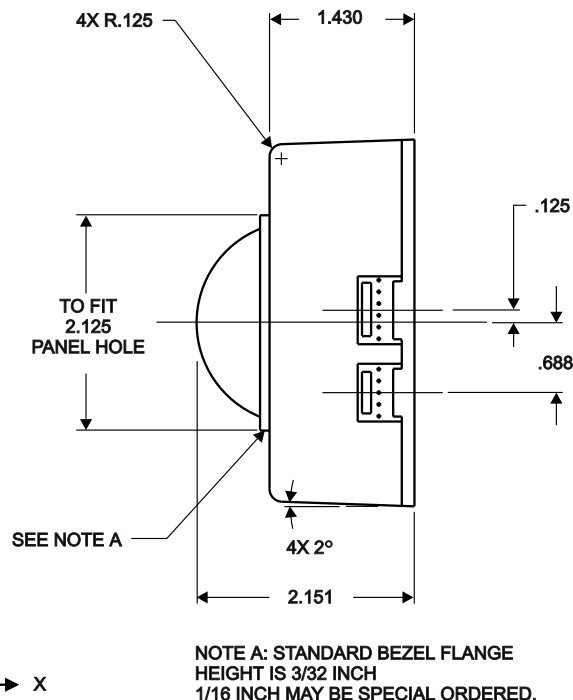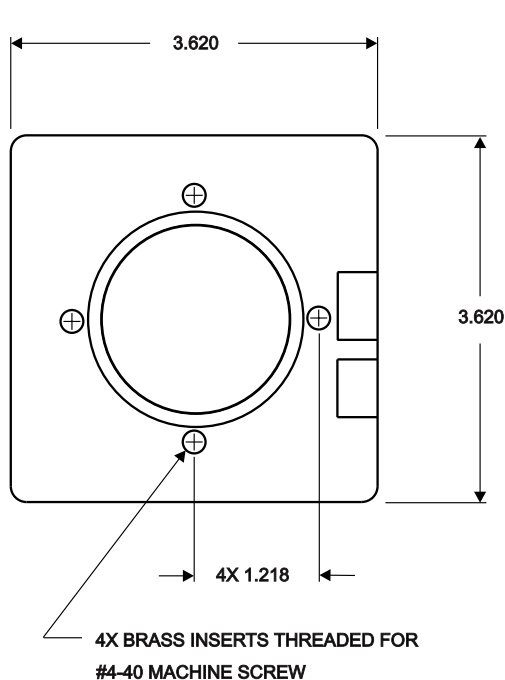   Input: +5V @ 30mA max
    Output: CMOS/TTL, Serial
Electrical MTBF: 100,000 operational(power on) hours

excellent craftsmanship

P200

The P200 is designed for applications when durability and precision are paramount. The P200 requires only 1.43 in. below panel depth and can easily be incorporated into any panel design.

3.620

4X R.125 — 1.430

3.620

.125

TO FIT 2.125 PANEL HOLE

.688

SEE NOTE A

4X 1.218

4X 2°

2.151

Y

X

ORIENTATION

4X BRASS INSERTS THREADED FOR #4-40 MACHINE SCREW

NOTE A: STANDARD BEZEL FLANGE HEIGHT IS 3/32 INCH 1/16 INCH MAY BE SPECIAL ORDERED.

Standard Features

- Reliable non-contacting optical encoders
- Four distinct button inputs
- Click and Click Lock inputs
- Easy axis rotation
- Zero drift
- Polished stainless steel shafts
- Standard AMP connectors
- Easy installation
- Encased stainless steel bearings
- Protocol Support:
  - PS/2 for PC's
  - Serial (5V and RS232)
  - USB for PC and Macintosh
  - PS/2 for UNIX Workstations
  - Raw Quadrature Waveforms
  - Sun Microsystems

Typical Applications

- Robotic positioning controls
- Medical diagnostic equipment
- Automated machine controls
- Video editing & production equipment
- Navigation controls
- Medical imaging systems
- Industrial & scientific instrumentation
- Motorized microscopes and vision systems

Electrical Specifications

PS/2
   Input: +5V @30mA Max
   Output: CMOS/TTL, Serial
Microsoft
   Input: DTR @ 15mA max
   RTS @ 15mA max
   Output: RS-232, Serial
USB
   Input: 4V – 5.35V @ 25mA max
   Output: USB
Quadrature
   Input: +5V @ 30mA max
   Output: Quadrature Waveforms
   Sun Workstation
      Input: +5V @ 30 mA max
      Output: CMOS/TTL, Serial
      Electrical MTBF: 100,000 operational (power

Physical Specifications

Ball: 2.0 in. Thermoset phenolic (black)
Housing: High impact plastic (black)
Rotation: 360º
Tracking force: 10 grams
Weight: 281 grams
Dimensions: 3.62in. W x 3.62in. D x 1.43in .H
Mounting position: Horizontal to 90º
Temperature:
   Storage: -32ºC to +75ºC
   Operating: -15ºC to +70ºC
Mechanical MTBF: 5,000,000
   180º rotation with
   6 ounces of vertical force

Optional Features

- 2 or 3 button strips
  - Connector Cable

DT225

From day one, the DT225 was designed to work in a desktop environment. By utilizing smooth stainless steel shafts, five point encased ball bearings support, and a large 2.25in. thermoset phenolic ball, the DT225 provides accurate yet effortless precision.
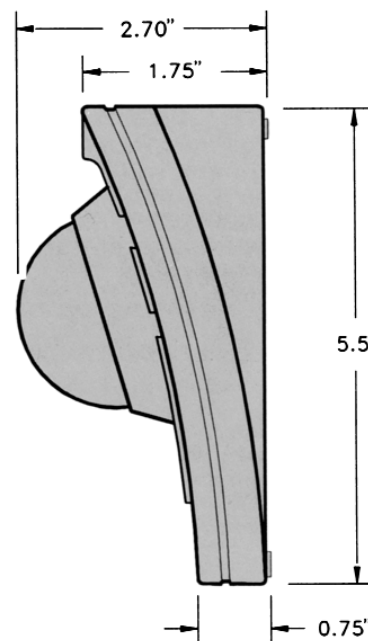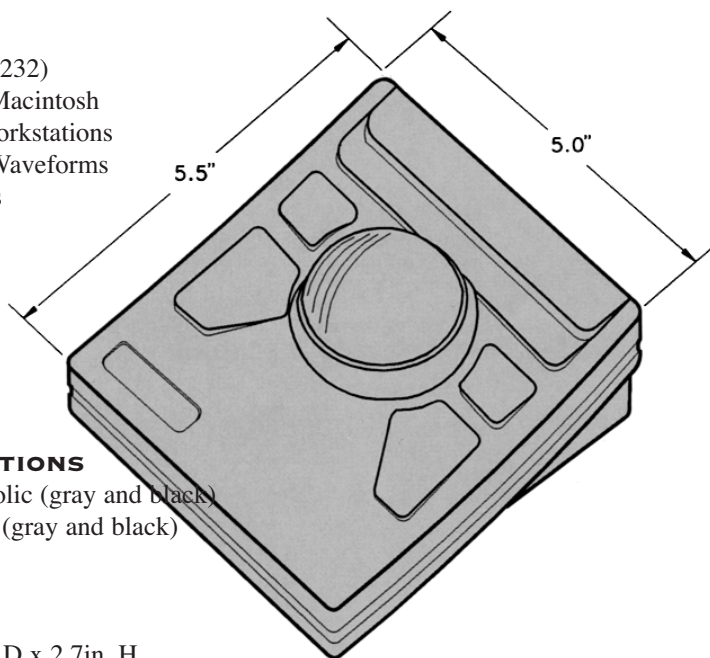
Standard Features

- Reliable non-contacting optical encoders
- Four distinct button inputs
- Click and Click Lock inputs
- Zero drift
- Polished stainless steel shafts
- Easy installation
- Encased stainless steel bearings
- Protocol support:
    - PS/2 for PC's
    - Serial (5V and RS232)
    - USB for PC and Macintosh
    - PS/2 for UNIX Workstations
    - Raw Quadrature Waveforms
    - Sun Microsystems

Typical applications

- CAD/ CAM/ CAE
- Process Control
- Video editing equipment
- Imaging and computer graphics
- Non-destructive test and measurement
- Medical diagnostic equipment
- Automated machine controls

Optional Features -none-

Physical Specifications

Ball: 2.25in. Thermoset phenolic (gray and black)
Housing: High impact plastic (gray and black)
Rotation: 360º
Tracking force: 11 grams
Weight: 460 grams
Dimensions: 5.0in.W x 5.5in. D x 2.7in. H
FCC Approved: Class B, subpart J of part 15
Temperature
    Storage: -32ºC to +75ºC
    Operating: -15ºC to +70ºC
Mechanical MTBF: 5,000,000 180º rotations
    with 6 ounces of vertical force

Electrical Specifications

PS/2
    Input: +5V @ 30mA Max
    Output: CMOS/TTL, Serial
Microsoft
    Input: DTR @ 15mA Max
RTS
    Output: RS-232, Serial
USB
    Input: 4V-5.25V @ 25mA Max
    Output: USB
Quadrature
    Input: +5V @ 30mA Max
    Output: Quadrature Waveforms
Sun Workstation
    Input: +5V @ 30mA Max
    Output: CMOS/TTL, Serial
Electrical MTBF: 100,000 operational (power on) hours

DESCRIPTION	KEY	FEATURE	FEATURE AVAILABILITY																	
			LP150						P200						DT225					
Trackball Type	LP150	1.50" Panel Mount Trackball																	
	P200	2.00" Panel Mount Trackball																	
	DT225	2.25 Desktop Trackball																	
Protocol Format	1	Microsoft (2BTN Serial)	1						1						1					
	2	Mouse Systems (3/4 BTN Serial)		2						2						2				
	3	IBM PS/2 (2/3 BTN PS/2)			3						3						3			
	5	Quadrature (BUS for DT225)				5						5						5		
	6	Sun Workstation					6						6						6	
	7	USB (Universal Serial BUS)						7						7						7
Mounting Position	F	Level to 45°	X	X	X	X	X	X	X	X	X	X	X	X						
	N	Level to 90° (See NOTE 2)	X	X	X	X	X	X	X	X	X	X	X	X						
	X	Not Applicable													X	X	X	X	X	X
PPR Resolution	10	LP150 120 / P200 160 / DT225 180	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X	X
	20	LP150 240 / P200 320 / DT225 360	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	30	LP150 480 / P200 640 / DT225 720	X	X	X		X	X	X	X	X		X	X	X	X	X	X	X	X
Power Requirment	V00	5 Volt Regulated	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	R00	RS-232 (DTR and RTS)	X	X					X	X					X	X				

NOTES:

(1) X denotes availability of feature

(2) Increases tracking force to 60 grams

(3) PPR = Pulses per revolution (LP150/P200/DT225)

(4) 3 button PS/2 for SGI, IBM, DEC or HP must be specified at time of order

(5) Click lock on the LP150 and P200 requires a 3 button strip

(6) The LP150 and P200 are both available with splash proof gaskets (P/N 900-030 and 900-029, respectively).

(7) Example: P200-1F20R00 = P200 Panel mount trackball, Microsoft, Serial, level to 45 degrees, 320 PPR, RS-232.
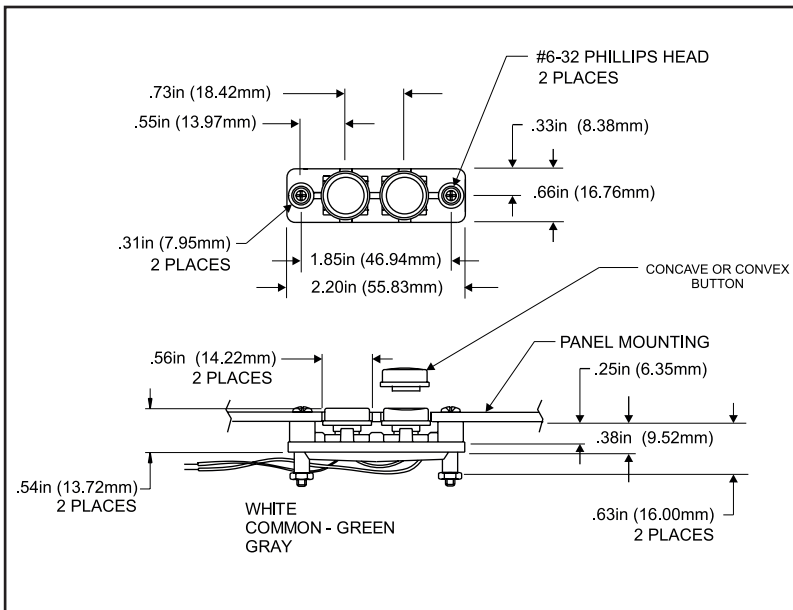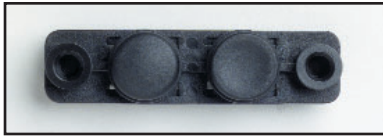
TYPICAL APPLICATIONS

Product names used herein are for identification purposes only and may be trademarks of their respective companies.
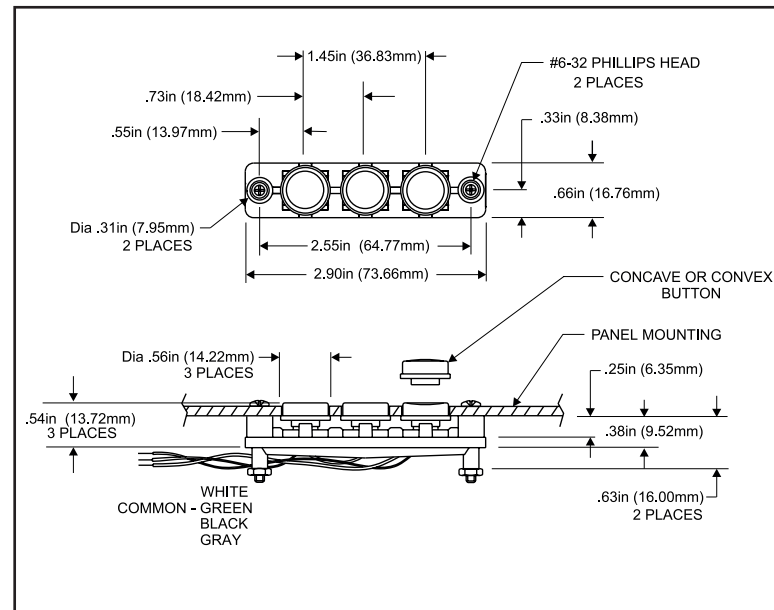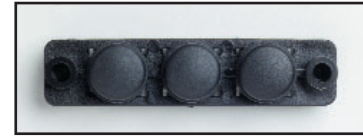
Button Strips

Available in two or three button models, Button Strips from CH Products provide actuation functionality to your panel mount trackballs. Button Strips offer an easy integration solution for applications requiring two or three inline panel mounted switches. Each switch provides tactile and audible feedback utilizing the durability of a 5,000,000 life cycle switch rated at 500mA at 12VDC. The switch type is a normally open, single pole/single throw with momentary contact. Button caps are available in either black or gray with either a convex or concave design.

2-BUTTON STRIP

3-BUTTON STRIP

2-button strip diagram:

- .73in (18.42mm)
- .55in (13.97mm)
- #6-32 PHILLIPS HEAD 2 PLACES
- .33in (8.38mm)
- .66in (16.76mm)
- .31in (7.95mm) 2 PLACES
- 1.85in (46.94mm)
- 2.20in (55.83mm)
- CONCAVE OR CONVEX BUTTON
- .56in (14.22mm) 2 PLACES
- PANEL MOUNTING
- .25in (6.35mm)
- .38in (9.52mm)
- .54in (13.72mm) 2 PLACES
- WHITE COMMON - GREEN GRAY
- .63in (16.00mm) 2 PLACES

3-button strip diagram:

- 1.45in (36.83mm)
- .73in (18.42mm)
- .55in (13.97mm)
- #6-32 PHILLIPS HEAD 2 PLACES
- .33in (8.38mm)
- .66in (16.76mm)
- Dia .31in (7.95mm) 2 PLACES
- 2.55in (64.77mm)
- 2.90in (73.66mm)
- CONCAVE OR CONVEX BUTTON
- Dia .56in (14.22mm) 3 PLACES
- PANEL MOUNTING
- .25in (6.35mm)
- .54in (13.72mm) 3 PLACES
- .38in (9.52mm)
- WHITE COMMON - GREEN BLACK GRAY
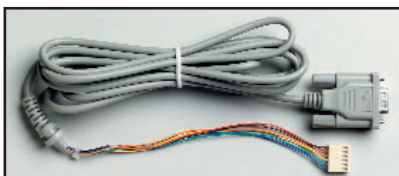- .63in (16.00mm) 2 PLACES

CABLES

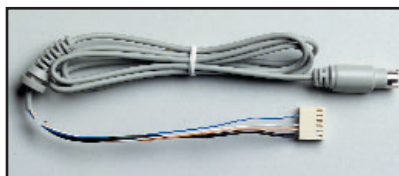CH Products offers a variety of cables for different connectors and protocols.

C1

C3

C4

C8

900-501C (C1) –15 pin DB15 male connector, black 7' cable (10 conductors)

900-504P (C2) – 8 pin DB15 male connector, black 7' cable (7 conductors)

900-518 (C3) – 9 pin DB9 male connector, black 5' cable (9 conductors)

900-525G (C4) – DB9 female connector, gray 7' cable (5 conductors)

900-599GRY – Type A connector (5 conductors)

900-525B (C4B) – DB9 female connector, black 7' cable (5 conductors)

900-527A (C5) – 6 pin Mini Din (PS/2) connector, gray 7' cable (4 conductors)

900-529 (C7) – 10 pin Mini Din (BUS) connector, gray 6' cable (10 conductors/10 Amiga conductors)

900-531 (C8) – 8 pin Mini Din (SUN) connector, gray, 4' cable

900-599BLK – Type A connector (5 conductors)

PRODUCTS

A Women Owned Small Business

CH PRODUCTS
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VISTA, CA 92083

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